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DS : DE FR GB
IC1 : G06F- 01/08
ET : A computer with interrupt controlled clock speed and its method
of operation
FT : Ordinateur avec une vitesse d'horloge commandée par interruption
et sa méthode de mise en oeuvre
GT : Rechner mit unterbrechungsgesteuerter Taktgeschwindigkeit und
Verfahren für seinen Betrieb
PA : International Business Machines Corporation
IN : Antanaitis, Benjamin Charles, Jr.
Emerson, William Blaine, Jr.
St. John, Joseph Winfield
ND : ESPACE 90/017 FIRST 90/002
ESPACE 90/046
AB : A computer includes a main processing unit having arithmetic
logic, memory address control, input/output address control,
and execution control. The computer also has an operating
system program which includes an interrupt handler module. A
variable frequency clock oscillator is disclosed which is
controlled by the operating system via the execution control
unit of the main processing unit. Machine level instructions in
the executing program change the clock speed whenever it is
necessary to keep the computer in synchronism with one of its
I/O adapters or to speed up the clock when slow speed circuits
are not being utilized. Clock speed is changed by the interrupt
handling module. Circuits and programs, which require longer
cycle times to execute properly, are placed together on
interrupt levels. For example, the machine check program
requiring the slowest clock speed is assigned to interrupt
level 0. I/O adapters using low-speed circuitry are assigned to
interrupt levels 1, 2 and 3. High speed circuitry adapters are
assigned to interrupt levels 4-7. Whenever an interrupt is
generated, the machine language program serving the interrupt
first changes the speed of the oscillator clock to that speed
defined for the interrupt level on which the interrupt was
received. When the interrupt has been serviced, the oscillator
clock speed is restored to that speed of the program operating
on the interrupt level which has just been interrupted.
